6.2a Integration by Substitution

A change of variables can turn an unfamiliar integral into one that we can evaluate. (The differential matters.)

$$\int f(x)\,dx = \int g(u)\,du$$

$$\int \sin(x) e^{\cos(x)}\,dx$$

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$$\int x^2 \sqrt{5+2x^3}\,dx$$

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$$\int \cot(7x)\,dx$$

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$$\int \frac{dx}{\cos^2 2x}$$

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$\int \cot^2 3x \, dx$

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$\int \cos^3 x \, dx$

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Definite Integrals

$$\int_0^{\frac{\pi}{3}} \tan x \sec^2(x)\,dx$$

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$$\int_0^1 \frac{x}{x^2-4}\,dx$$

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